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**Natural Resources**

**LANDSCAPING PLANNING**

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**NOTICE:** This publication is available at 62 Civil Engineer Environmental Management Flight. Please call 984-3913.

This instruction establishes policies for landscaping McChord Air Force Base. This regulation applies to all agencies and personnel who work or reside on McChord Air Force Base property.

**SUMMARY OF REVISIONS**

Updates landscaping policies and provides more comprehensive listing of approved plants and ground-cover analysis.

**1. General**

1.1. The landscaping theme for McChord AFB is "Pacific Northwest Military Park". This theme provides for cohesive visual attractiveness and is required for all base facility landscaping. McChord AFB is situated in a region that is world-recognized for its majestic mountains and evergreen forests. The Pacific Northwest Military Park theme reflects the rich, dark greens, and warm earth tones of these evergreen forests.

1.2. The Base Natural Resources Manager is to be consulted during all landscaping design phases and must concur with the final design or require adjustments. The final design must receive the Base Natural Resources Manager's approval to be acceptable.

**2. Guidelines**

2.1. Planning of landscape designs is to be such that the natural and man-made features of McChord AFB are enhanced to the fullest extent. Designs must provide for low maintenance plantings, considered both from short-term and long-term aspects. Landscaping must include informal cluster, groove

or height-graduated plantings to minimize or de-emphasize rigid structural outlines of building and facilities. Where possible, spacious vistas bordered by stately trees and counter pointed by informal under-plantings will be established.

2.2. Plant material must be of compatible foliage coloration and texture as well as size and form when mature. Shade and sun tolerance of the plants as well as insect, disease, drought, and air pollution resistance have been taken into consideration in these guidelines.

**3. Definitions.** For purpose of clarity, the following definitions are stated for trees, shrubs, and wood ground covers.

3.1. Trees. Woody plants having at least one erect perennial stem or trunk with a natural stem size of at least 3 inches in diameter at breast height (4 1/2 feet), a more or less definitely formed crown of foliage, and a mature height of at least 12 feet. A number of Rhododendrons are classed as trees.

3.2. Shrubs. Woody plants smaller than trees, commonly with several perennial stem growing from the same root. There are large or high shrubs and low or small shrubs. Many dwarf tree selections are classified as shrubs. Defined as low shrubs are creeping or prostrate plants with woody stems or woody at the base, even if only 1 to 2 inches above the ground (woody ground covers).

#### **4. Design Style.**

4.1. Trees, shrubs, ground covers, and turf comprise the palette of elements in planting compositions. The kinds of plants selected should be as few as possible to satisfy the requirements and objectives of the design. By limiting the number of plants, rather than cluttering the design with a planting mixture, clashing colors and forms are less likely to occur, and a unified composition will be created. Repetition with occasional contrast contributes to a successful planting design. Large masses of a single color are generally more satisfying than a heterogeneous mixture of several colors. Care should exercised to pick colors that are harmonious when seen together.

4.2. To ensure maximum effectiveness with the lowest maintenance, emphasis should be placed on the use of evergreen trees and larger growing shrubs such as Rhododendron instead of extensive use of small shrubs. Trees are ultimately less expensive to maintain than shrubs. Evergreen trees and shrubs (with their various color forms) are advantageous because they provide color and background during the winter months when deciduous plants are leafless. Deciduous plants will be utilized only in so far as they provide color focal-points or add emphasis to specific features. **Only specified ground covers will be used and then sparingly. The planning of all landscaping must assume that the planting will receive little or "NO" maintenance (including watering) after installation.**

4.3. While informal or natural arrangement of plants is desirable for overall appearance, the importance of certain areas, selected building or approaches to them can be emphasized for formal planting. Formality in planting requires high maintenance to retain a consistently satisfactory appearance. Plant losses are conspicuous and difficult and costly to replace. Informal or naturalistic plantings soften the environment and, if losses occur, they are inconspicuous and may be replaced easily with small plants. In planting along streets, excellent results may be obtained by a combination of formal and informal planting of trees. Planting should be predominantly informal with only occasional use of symmetry to accent a particular architectural or site feature.

**5. Earth Berms.** Maximum use will be made of earth berms and land forms to provide vertical relief in the landscape. Earth berms can effectively screen parking lots and other unsightly features from view from roadways. Planted earth berms facing the street should be designed relative to the 52 inch viewing height, or eye level, of a motorist.

**6. Selection.** Specific kinds and types of trees and shrubs will be selected for landscaping particular locations on the basis of ultimate mature growth sizes and forms (see Atchs 1 and 2 for list of approved plants). Plants are to be located a sufficient distance away from roads, walks, utilities, structures and building foundations, windows and doors to provide for ultimate mature growth such that the plants should “never” require pruning (other than removal of dead, diseased, or damaged parts) to prevent blockage of, damage to, or interference with these facilities. Plants selected for use are to be such that their root systems will not interfere with or damage subterranean utilities (electric and telephone lines, sewers, etc.).

## **7. Planting Setbacks.**

7.1. For buildings of frame construction, trees will be sited a minimum distance, on center, away from building foundations -- this distance being equal to the maximum diameter of the tree’s mature crown (spread). With the exception of wood ground covers, shrubs will be sited away from the foundations of all buildings a minimum distance, on center of plant, three-quarters the average diameter of the mature spread of the shrub or 1 foot beyond the building’s roof drip line -- whichever distance is greater. Low shrubs (woody ground covers) will be planted, on center of plant, a minimum of 3 feet beyond the roof drip line of all buildings (see Atch 3 for Tree and Shrub Planting Details).

7.2. For buildings of masonry or metal construction, trees will be planted away from the building foundation a minimum distance, on center of plant equal to three-quarters the diameter of the maximum mature crown (spread) of the tree.

7.3. Specific requirement setbacks of trees and shrubs from various facilities such as utility lines, road curbs, walks, parking areas, etc., will vary with each individual planting situation and the species or varieties of plants proposed for use. Ultimate planting types, methods, locations and other related requirements will be subject to concurrence by the Base Natural Resources Manager.

**8. Guy Staking.** The primary purpose of guying and staking trees is to prevent excessive movement of the trunk, thus keeping new fibrous roots from breaking their hold in the ball of earth and the surrounding new soil. However, artificial support is usually unnecessary except for trees with slender, weak trunks over 2 inches in caliper. Evergreen trees 6 feet and under usually do not need support. Unsupported trees tend to develop stronger and more resilient trunks. Guying and staking is also to be avoided because of the labor and material involved.

**9. Bare Root Plants.** Bare root plant material is not authorized for planting on McChord AFB.

**10. Planting Beds.** Outlining of planting beds adjacent to turf areas is recommended. Concrete mow strips may be used.

**11. Mulch.** The base soils consist mainly of glacial drift and outwash. The typical soil is a gravelly, sandy loam some four to six inches in depth. During even short periods without rainfall, this soil becomes extremely dry, subjecting plants to strong moisture-stress conditions. For this reason, proper and adequate mulching of plants is essential. All plants must be mulched with a beauty bark-type mulch to a minimum

of three (3) inches in depth. Planters, traffic islands, bedded areas, etc., will be mulched in their entirety to the outside definition of the planter, traffic and shrubs require a minimum mulched area beneath the plant -this area being defined as the plant's drip line of the ground area covered by the outer limit of the circumference of the plant's foliage.

**12. Turf.** The type and mixture of grasses and other plants, such as clover, as well as the methods of installation for the establishment of turf will require a project-by-project determination based on the site use, erosion control considerations, and immediacy of visual impact.

**13. Tree Removal.**

13.1. AFI32-7064 requires that forest products (such as firewood) from areas cleared for construction projects must be salvaged and sold by the government.

13.2. All usable trees and limbs six (6) inches in diameter or greater (minus foliage, stumps, and roots) are to be cut into 16-inch lengths by the contractor and taken by the contractor to a location determined by the Base Natural Resources Manager.

13.3. The contractor is required to remove all other trees and limbs, stumps, roots, and other waste and dispose of this material in a location off base (as authorized by the applicable county or state agencies) in accordance with current rules and regulations governing the disposal of solid waste. The contractor will pay disposal fees and sundry charges.

**14. Tree Protection.** Landscaping plans must provide for protection of trees and shrubs remaining in final work and immediately adjacent to construction sites. These plants will be protected by the placement of wood barricades located no closer to the plants than the crown circumference as defined by the outer drip line of the plant's crown.

**15. Nursery Stock Standard.** All landscaping plants must meet the specifications of ANSI Z60.1, American Standard for Nursery Stock. Prior to installation, all plants are to be inspected by the government to ensure that the plants are true to name and meet the specifications of the ANSI Z60.1. The point of contact is 62d Civil Engineer Squadron Environmental Management Flight (62 CES/CEV), phone 984-3913.

**16. Hydroseeding.** Hydroseeding is to be done by the mechanical application of a mixture containing on a per-acre basis, 250 pounds of mixed types of fescue grass seed, 500 pounds of 10-20-20 fertilizer, and 2,000 pounds of green cellulose fiber.

**17. Topsoil Specifications.**

17.1. Topsoil will be a mix containing 70 percent sandy loam and 30 percent organic material.

17.1.1. The United States Department of Agriculture Classification System will determine the sandy loam soil textural class. This textural class is restricted to the following maximum percentage composition based on the material passing the Number 10 Screen: Sand: 65 percent; Silt: 25 percent; Clay: 15 percent.

17.1.2. Organic material will consist of horse or cow manure with less than 5 percent sawdust or mushroom compost or fibrous peat or granular wood peat. Peat classification will be as defined in Chapter 13.3, Nature and Properties of Soils, 6th Ed. (MacMillan Co.) as updated.

17.1.3. The topsoil mix will not contain more than the following amounts as a percentage of the total mix: Sand: 46 percent; Silt: 18 percent; Clay: 11 percent; Organic Material: 30 percent.

17.2. The topsoil mix will be free from materials toxic to plant growth, noxious weed seed, rhizomes, roots, bark or other woody plant parts; stone and gravel larger than 1/4 inch in diameter, metal and other debris.

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## Attachment 1

## LIST OF APPROVED PLANTS FOR MCCHORD AFB

TREES		
SCIENTIFIC NAME	COMMON NAME	DESCRIPTION
<i>Abies grandis</i>	'Grand Fir'	Deep green, glossy above, white lines beneath, 1 – 1 ½ long needles in two rows along branches. One of the largest firs reaching 300 ft. Prune it high.
<i>Abies magnifica</i>	'Red Fir'	Tall, stately tree w/symmetrical, horizontal, rather short branches. New growth silvery gray. Blue green 1" needles curve upwards on upper limbs. Hard to grow at low elevations.
<i>Abies procera</i>	'Noble Fir'	Similar in appearance to Red Fir. Grows 90-200 ft. high in wilds. Short stiff branches, w/blue green, 1" long needles. Large cones with extended bracts.
ACER 'saccharum'	'Sugar Maple'	Deciduous. Growth to 60 ft. or more. Stout branches with upward sweep form fairly compact crown. Leaves 3-6 in. wide, green above/pale below. Spectacular fall color.
ACER palmatum 'Dissectum',	'Laceleaf Maple'	Small shrub with drooping branches, green bark; pale green finely dissected leaves turn gold in autumn.
ACER palmatum	'Moonfire' Japanese Maple	At maturity 15 ft. high; purple-red lobed leaves from 3-5 in. in length, 4 ½ in. wide turning crimson in fall.
ACER platanoides 'columnare'	'Columnar' Maple	Deciduous 50-60 ft. Slow grower, narrower form than the species. Leaves dark green 3-5 in. wide; yellow in fall.
ACER platanoides	'Crimson King' Maple	Deciduous 50-60 ft. Holds purple foliage color until leaves drop. Slower growing than the species.
ACER platanoides	'Emerald Queen' Maple	Deciduous 50-60 ft. Quick grower with good form.
ACER rubrum	'Bowhall' Maple	Deciduous fairly fast growth to 40 ft. or more with 20 ft. spread. Tall, narrow, cone shaped with orange red foliage color in fall.
ACER rubrum x A. saccharinum	'Autumn Blaze' Maple	Deciduous open form fast growth, weak wood & narrow crotch angles break easily; semipendulous branches. Silvery gray bark, leaves 3-6 in. wide. Good fall color.
ACER rubrum	'Armstrong' Maple'	Tall, very narrow tree with good red fall color. Leaves 2-4 inches long.

Calocedrus decurrens,	'Incense Cedar'	Evergreen, symmetrical growing 2 ft. per year to 75-90 ft with dense, narrow, pyramidal crown; trunk reddish brown with cones. Drought tolerant when mature, takes sun, tolerates poor soils; good green wall/high screen.
Carpinus betulus, 'Fastigiata'	'Columnar Hornbeam'	Deciduous; dark green leaves with upright branches, narrow to 15 ft. wide.
Cedrus Atlantica 'Glauca',	'Blue Atlas Cedar'	Slow growing to 60 ft. Silver blue foliage, pyramidal in form, 30-40 ft. wide. Less spreading than other cedars.
Cedrus c. deodara	'Deodar Cedar'	Fast growing, graceful to 80 ft. w/40 ft. spread at ground. Softer, lighter texture than other cedars. Pruning makes tree more dense/drought resistant once established.
Chamaecyparis nootkatensis,	'Nootka Cypress'	Alaska cedar reaching 35-40 ft. with cones. Conical crown w/drooping dark bluish/grayish green branches. Good in abundant soil & atmospheric moisture.
Chamaecyparis obtusa, 'Gracilis',	'Dwarf Hinoki Cypress'	Dark green compact foliage, pyramidal, somewhat weeping form, narrow. Slow growing to 10 ft. high.
Cornus kousa,	'Japanese Dogwood'	Dark green leaves, late flowering, small tree to 15 ft. wide.
Cupressocyparis leylandi,	'Leyland Cypress'	Bluish green foliage, fast growing to 60-70 ft & 15 ft. wide. Can be pruned indefinitely to maintain certain shape.
Fraxinus 'latifolia (oreona)	'Oregon Ash'	Deciduous growing to 40-80 ft. Leaves 6-12 in. long light green. Male & female flowers on separate trees.
Malus	'Snowdrift' Crabapple'	Rounded, dense crown growing to 20-25 ft. tall, 20 ft. wide. Red buds open to white long bloom flowers. Orange red fruit less than ½ in. across.
Picea glauca	'White Spruce'	Conical tree to 60-70 ft. Dense when young with pendulous twigs and silver green foliage.
Picea pungens	'Colorado Spruce'	Stiff, regular, horizontal branches forming broad pyramid growing 80-100 ft. Foliage blue green to steely blue.
Pinus nigra	'Austrian Pine'	Slow to moderate growth to approx. 40 ft. Dense, stout pyramid with uniform crown; 3-6 ½ in. stiff, dark green needles; cones 2-3 ½ in. Good screen or windbreak.

Populus -tremuloides'	'Quaking Aspen'	Fast growing, short-lived to 40-50 ft with 20-30 ft. spread. Dainty, light green, round leaves; good yellow fall color.
Populus trichocarpa	'Black Cottonwood'	Tall, spreading tree to 40 ft. in 15 yrs. Heavy limbed with dark gray, furrowed bark. Leaves triangular, deep green above, silver below 3-5 in. across.
PRUNUS serrulata	'Kwanzan' Cherry'	Most popular & hardy; double deep pink flowers, 30-40 ft high & wide tree. Red leaves; branches stiffly upright.
PRUNUS serrulata	Royal Burgundy' Cherry p.p. No 6520	Similar to Kwanzan but slightly smaller w/purple leaves
Pseudotsuga menziesii	'Douglas Fir'	Densely set, soft needles, 1 to 1-1/2", dark green or blue green. 70-250 feet in forests. Cones oval and hang down.
Pyrus calleryana, 'Whitehouse',	'Whitehouse Callery Pear'	Deciduous ornamental growing to 15-25 ft. in full sun. Leaves 1 1/2-3 in. dark green/glossy. White clustered flowers, early bloom. Fruit small, round, inedible.
QUERCUS bicolor	'Swamp White Oak'	Deciduous medium to slow growth to 60 ft. Leaves dark shiny green to 7 in. Tolerates wet well-drained soil.
QUERCUS coccinea	'Scarlet Oak'	Deciduous reaching 60-80 ft. High, light, open-branching habit. Leaves bright green to 6 in. & bright scarlet in autumn nights. Roots grow deep. Good street or lawn tree/fine to garden under.
QUERCUS robur	'Westminister Globe' (Michround) P.P. No 3708	Large, massive oak. Slow-medium growth rate w/ symmetrical form & branch development, dark green leaves w/acorns.
QUERCUS rubra	'Red Oak'	Deciduous fast growing to 90 ft.; broad, spreading branches & round-topped crown. Leaves 5-8 in. red in spring & red/brown/orange in fall. Deep roots.
SALIX babylonica	'Weeping Willow'	To 30-50 ft. w/equal or greater spread. Leaves 3-6 in.; more pronounced weeping habit.
Sequoiadendron gigan- teum,	'Giant Redwood'	Evergreen reaching 325 ft. w/30 ft. trunk diameter. Dense prickly foliage gray green w/short, overlapping leaves w/sharp points. Dark reddish brown cones 2-3 1/2 in.
Thuja T. plicata	'Western Red Cedar'	Reaches over 200 ft., slender, dropping branchlets w/ dark green leaves forming lacy sprays. Brown cones 1/2 in.



TILIA cordata	'Greenspire' Linden'	Deciduous 10-15 ft. w/small fragrant white flowers in drooping clusters. Leaves 1 ½-3 in. dark green. Excellent lawn/street tree. Upright conical shape.
Tsuga canadensis	'Eastern Hemlock'	Height 40-70 ft. by 25-35 ft. spread; 25-50 ft. in 15-30 yrs. Graceful evergreen hedge, excellent screening/groupings. Small, slender ½-1 in. cones.
Acuba japonica 'Gold-ust'	Goldust Acuba	
Berberis thunbergii, 'Crimson Pygmy'	Dwarf Redleaf Barberry	Hardy to -10 degrees, less than 1 ½ ft high & 2 ½ ft wide. Leaves bronzy blood red. Requires sun to develop color.
Continus cogqygria,	'Royal Purple' (Purple Smoke Tree)	Height 10-15 ft. by 10-15 ft. spread; medium growth rate. Foliage maroon-red darkening to purple red/black. Sparse flower bloom in May-Jun changing to smoky pink "hairs" Jun-Sep.
<b>SHRUBS</b>		
<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>	<b>DESCRIPTION</b>
Euonymous alata, 'Conpactus'	'Burning Bush'	Height 15-20 ft. , similar spread. Leaves med. to dark green – fall bright red. Excellent hedge or screen without pruning.
Ilex crenata, 'Helleri'	'Dwarf Japanese Holly'	Looks like boxwood. Dense, erect 3-4 ft. Narrow finely toothed leaves ½-¾ in. Black berries. Hardy in cold weather, excellent hedges, edgings; sun or shade.
Juniperus chinensis, 'Armstrong'	'Armstrong Juniper'	Dwarf to 3-4 ft. w/equal or greater spread, branches horizontally spreading. Bright green that holds in cold.
Juniperus chinensis, 'Torulosa'	'Hollywood Juniper'	Grown as tree or shrub to 20-30 ft high. Leaves vivid green, scale-like. Excellent heat & salt tolerance.
Juniperus horizontalis, 'Wiltoni'	'Blue Rug Juniper'	Flat growing form w/trailing branches 4-6 in. by 6-8 ft. fairly fast growing. Foliage intense silver-blue, light purplish tinge in winter. Most common ground cover.
Juniperus sabina, 'Tam-ariscifolia'	'Tam Juniper'	Low spreading, mounded form, branches horizontal; bluish green. Grows 18 in. tall; 10-15 ft. across in 15-20 yrs. Susceptible to blight.
Pieris japonica, 'Mountain Fire'	'Mountain Fire Pieris'	Growing 9-12 ft. high, 6-8 ft spread. Leaves long & narrow dark green above, light beneath. New growth fire red w/white flowers.

Pieris japonica, 'Variegata'	'Variegata Pieris'	Growth 10-12 ft. w/age, leaves w/white margins. White flowers pretty in nook of garden.
Prunus laurocerasus	'Otto Luyken Laurel'	Growth 3-4 ft. high spreading to 6-8 ft. Leaves dark green 4 in. by 1 in, very free flowering. Grows in shade.
Rhododendron	'Virginia Richards'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Flowers large pale yellow w/pink overtone.
Rhododendron	'Boule de Neige'	Size 3-6 ft. in height w/finest white flowering type. Evergreen foliage is dark, lustrous green.
Rhododendron	'Chionoides'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. White flowers w/yellow centers.
Rhododendron	'Cynthia'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Large and vigorous rosy crimson flowers w/blackish crimson markings.
Rhododendron	'Dora Ametis'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Floriferous white flowers, lightly spotted w/green, slightly aromatic.
Rhododendron	'Elisabeth'	Size 3-6 ft in height w/similar or greater spread. Leaves dark green. Red flowers.
Rhododendron	'Jean Marie de Montague'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Bright scarlet blooms.
Rhododendron	'Lord Roberts'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Flowers red with a dark blotch.
Rhododendron	'Purple Splendour'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Flowers dark purple w/black blotch.
Rhododendron	'Scintillation'	Medium height, compact plant w/dark green leaves. Flowers gold-throated pink.
Thuja occidentalis, 'Pyramdalis'	'Pyramdalis Arborvitae'	Height 40-60 ft., 10-15 ft. spread w/narrow pyramidal formal outline w/bright green soft textured foliage.
Viburnum davidii	'David Viburnum'	Low, compact 3-5 ft. high dark blue-green evergreen foliage. Pink budded in Apr-May.

## Attachment 2

## GROUND COVER ANALYSIS

GROUND COVER		
SCIENTIFIC NAME	COMMON NAME	DESCRIPTION
Arctostaphylos uva-ursi	‘Bearberry’ or ‘Kinnikinnick’	Popular ground cover spreading & rooting wide. Bright glossy green 1 in. leaves turn red in fall. Flowers white or pinkish; fruit red or pink.
Dianthis	‘Rose bowl’	Gray green, narrow leaves form tight mat. Small, fragrant, cerise rose flowers on 6 in. stems. if spent blooms removed regularly.
Hedera helix	‘English Ivy’	Leaves dark, dull green w/paler veins 2-4 in. long. Better for small spaces.
Vinca minor	‘Dwarf Periwinkle’	Long trailing stems root as they spread. Oblong leaves with short stalks. Require little water per month; grow only in shade. Lavender flowers 1/2 inch across.

## Attachment 3

## TREE AND SHRUB PLANTING DETAILS

